

REMARKS

Applicants have amended their claims in order to further clarify the definition of various aspects of the present invention. Specifically, Applicants have amended claims 5, 9, 10 and 14 to recite "an" extension line; and have further amended claims 9 and 14 to recite "a" range of this extension line. Applicants have amended claims 6 and 11 to recite that the corner portion (or second corner portion) is positioned "apart from" a center in thickness of the third plate.

Applicants have amended claims 12 and 13, the independent claims in the application, to recite that the recessed portion is defined, inter alia, by one substantially vertical surface facing outwardly "in a horizontal direction", laterally to the thickness direction of the member; to recite that the one substantially horizontal surface facing outwardly in the thickness direction of the member is positioned in a range, in this horizontal direction, adjacent a thickness of the member; and to recite that in the friction stir welding, a center of the rotary tool is inserted into the member at a specified position. Applicants have further amended claim 12, and have amended claim 15, to recite that the further (or another) substantially horizontal surface facing outwardly in the thickness direction is positioned in a range, in the horizontal direction, adjacent a thickness of the hollow frame member. Additionally, claim 15 has been further amended to recite that in the friction stir welding a center of the rotary tool "is inserted into the hollow frame member" and is substantially coincided with an extension line of the further substantially vertical surface.

Noting the foregoing amendments, Applicants have set forth claims 9 and 14 in independent form, incorporating therein the subject matter of their parent claims, including amendments thereto as discussed in the foregoing.

Initially, it is respectfully requested that the present amendments be entered. Noting particularly the indication by the Examiner that claims 5, 6, 9-11 and 14 would be allowable if rewritten to overcome the rejections under the second paragraph of 35 U.S.C. §112, and to include all the limitations of the base claim and any intervening claims, clearly the writing of claims 9 and 14 in independent form are proper, and materially limit issues remaining in connection with the above-identified application.

Furthermore, noting amendments to all of the claims, it is respectfully submitted that these amendments materially limit issues remaining in connection with the above-identified application, particularly in light of the bases for claim rejections under the second paragraph of 35 U.S.C. §112; and, at the very least, present the claims in better form for appeal. Noting that the present amendments focus on rejections by the Examiner newly made in the Office Action mailed June 27, 2006, it is respectfully submitted that the present amendments are clearly timely.

In view of the foregoing, it is respectfully submitted that Applicants have made the necessary showing under 37 C.F.R. §1.116(c); and that, accordingly, entry of the present amendments is clearly proper.

The bases for rejection of the previously considered claims under the second paragraph of 35 U.S.C. §112, set forth in Item 4 on pages 2 and 3 of the Office Action mailed June 27, 2006, are noted. In view of the present amendments to the claims, it is respectfully submitted that this rejection under the second paragraph of 35 U.S.C. §112, is moot.

Thus, in connection with each of claims 12, 13 and 15, Applicants have omitted the recitation that the substantially horizontal surfaces are positioned in a range of a plate thickness of the member, and recite instead such surface is

positioned in a range, in a horizontal direction, adjacent a thickness of the member. As can be appreciated from, for example, Fig. 3, the horizontal surface, respectively forming part of the corners 33b, 34b, is adjacent a thickness structure of the member (for example, to be illustrative and not limiting, vertical plate 36 in Fig. 3). Accordingly, it is respectfully submitted that claims 12, 13 and 15 are sufficiently definite, for satisfying requirements of the second paragraph of 35 U.S.C. §112, with respect to positioning of the substantially horizontal surfaces.

Moreover, in view of present amendments to claims 12, 13 and 15, it is respectfully submitted that the issue raised by the Examiner, that the language reciting that the center of the rotary tool substantially coincides with an extension line of the vertical surface renders the scope of the claims indefinite, is moot. Thus, claims 12, 13 and 15 recite that the respective recessed portions are portions capable of having a friction stir welding carried out therein by inserting a rotary tool therein, and these claims go on to recite that in this friction stir welding, the center of the rotary tool is inserted into the member and is substantially coincided with an extension line of the substantially vertical surface, defined previously. It is respectfully submitted that this recitation defining the structure of the member is sufficiently definite such that one of ordinary skill in the art would know whether any specific member capable of being friction stir welded fell within or outside the scope of the present claims. Under the present circumstances, it is respectfully submitted that the second paragraph of 35 U.S.C. §112 requires nothing more. See In re Moore, 169 USPQ 236 (CCPA 1971).

The Examiner has raised antecedent basis issues in connection with claims 5, 9, 10 and 14. In light of amendments to claims 5, 9, 10 and 14, to recite "an"

extension line and "a" range, it is respectfully submitted that such issues in connection with antecedent basis are moot.

In connection with previously considered claims 6 and 11, the Examiner contends that it is unclear where "another end side of the first [or second] plate from a center in said thickness of the third plate" is. Claims 6 and 11 have been amended to clarify positioning of the corner portion, consistent with, for example, the paragraph bridging pages 6 and 7 of Applicants' specification. Note especially the description at lines 20-23 on page 6 of Applicants' specification, that the corners 33b, 34b are situated slightly to the left of the extension of the center line of the thickness of the vertical plate 36. In view of amendments to claims 6 and 11, it is respectfully submitted that basis for the rejection thereof under the second paragraph of 35 U.S.C. §112, is moot.

As can be seen in the foregoing, Applicants have extensively amended their claims in order to obviate all issues raised by the Examiner under the second paragraph of 35 U.S.C. §112. If any issues remain, the Examiner is respectfully requested to contact the undersigned so as to obviate any such issues. The Examiner is thanked in advance for cooperating with this request.

Applicants respectfully submit that all of the claims presented for consideration by the Examiner patentably distinguish over the teachings of the prior art applied by the Examiner in rejecting in the Office Action mailed June 27, 2006, that is, the teachings of U.S. Patent No. 3,984,961 to Chieger, et al, under the provisions of 35 U.S.C. §102 and 35 U.S.C. §103.

It is respectfully submitted that this reference as applied by the Examiner would have neither taught nor would have suggested such member, or such hollow frame member, as in the present claims, including the recessed portion of the outer

face opening directed toward one outer side in the thickness direction of the member and being defined by one substantially vertical surface facing outwardly in a horizontal direction, laterally to the thickness direction of the member, and by one substantially horizontal surface facing in the thickness direction of the member, wherein the one substantially horizontal surface facing outwardly in the thickness direction of the member is positioned in a range, in the horizontal direction, adjacent a thickness of a member; and wherein the respective recessed portions are portions capable of having a friction stir welding carried out therein by inserting a rotary tool therein, wherein, in this friction stir welding, a center of the rotary tool is inserted into the member and is substantially coincided with an extension line of the one substantially vertical surface facing outwardly laterally to the thickness direction of the member. See claim 12, note also claim 13.

Additionally, it is respectfully submitted that this reference would have neither disclosed nor would have suggested such member or such hollow frame member as in the present claims, including features as discussed previously in connection with claims 12 and 13, and, moreover, wherein another outer face of the member has a recessed portion defined by another substantially vertical surface facing outwardly laterally to the thickness direction of the member and by another substantially horizontal surface facing in the thickness direction of the member, the another substantially horizontal surface facing outwardly in the thickness direction of the member being positioned in said range, in the horizontal direction, adjacent the thickness of the member; and wherein this further recessed portion is a portion capable of having a friction stir welding carried out therein by inserting the rotary tool therein, wherein in this friction stir welding, the center of the rotary tool is substantially coincided with an extension line of the another substantially vertical

surface facing outwardly laterally to the thickness direction of the member. See claim 12; note also claim 15.

Moreover, it is respectfully submitted that the teachings of this applied reference would have neither disclosed nor would have suggested the other features of the present invention as in the claims rejected over the teachings of Chieger, et al, having features as discussed previously in connection with claims 12, 13 and 15, and additionally including (but not limited to), features such as wherein the recessed portion is provided at a connection portion of the third plate and the one end of the first plate (see claims 3 and 8).

By utilizing the recessed portions including the horizontal surface thereof as recited in the present claims, relative to a thickness of the member (particularly relative to the third plate, with respect to the hollow frame member); and, moreover, by providing the recessed portions with respect to positioning of the rotary tool during carrying out the friction stir welding, a good friction stir welding can be obtained. Specifically, through use of the recessed portions, including the substantially horizontal surface, with the relative positioning of the rotary tool to the vertical surface of the recessed portion, deformation of the member subjected to the friction stir welding can be avoided, and a good friction stir welding can be carried out. Note, for example, pages 6-9 of Applicants' specification.

Chieger, et al, discloses a floor of a container which includes a plurality of hollow extruded metal boards. The floor boards at the center of the floor have vertically disposed ribs to maximize resistance to horizontal bending moments and crushing loads, while the boards adjacent the sides of the container have angularly disposed ribs to maximize the resistance thereof to shear loads. The boards are secured together by welding, top and bottom flanges on each board extending into

complementary notches in the top and bottom, respectively, of an adjacent board to facilitate the welding. Note, in particular, column 1, lines 15-24. See also column 1, line 60 column 2, line 5.

As can be seen, for example, in Fig. 2 of this patent, the side or edge webs 22 extend beyond the edge of the board 31 provided with the side webs 22. In particular, note that the vertical webs 22 extend beyond substantially horizontal portion of the notches 24 and 25. It is respectfully submitted that this patent does not disclose, nor would have suggested, the structure as in the present claims, including, inter alia, wherein the substantially horizontal surface facing outwardly in the thickness direction of the member is positioned in a range, in the horizontal direction, adjacent a thickness of the member, and advantages achieved thereby particularly in friction stir welding the member.

Moreover, it is respectfully submitted that Chieger, et al, is silent in connection with structure capable of having a friction stir welding carried out therein. Note especially the relatively thin sheet material in Chieger, et al, and positioning of structure (e.g., a vertical surface web 22 and the notches 24 and 25 in Chieger, et al). It is respectfully submitted that this reference does not disclose, nor would have suggested, recessed portions being portions capable of having a friction stir welding carried out therein by inserting a rotary tool therein, particularly wherein such portions are further defined by, in the friction stir welding, a center of the rotary tool utilized in the friction stir welding is inserted into the member and is substantially coincided with an extension line of the substantially vertical surface facing outwardly laterally to the thickness direction of the member.

The contentions by the Examiner that all references in the claims to friction stir welding present an intended use environment; and that, as best understood, the

rotary tool in the claims is not an element of the member, is noted. However, it is respectfully submitted that the friction stir welding, and rotary tool, provide recitations defining properties and/or structure of the recited members, and must be considered in determining patentability at least with respect to such structure and properties defined.

The contention by the Examiner in Item 8 on page 4 of the Office Action mailed June 27, 2006, that recitations of intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art, is noted. Where such recitation in connection with intended use define properties and/or structure, such recitations must be considered in determining patentability.

In view of the foregoing, entry of the present amendments, and reconsideration and allowance of all claims presently pending in the above-identified application, are respectfully requested.

Applicants request any shortage of fees due in connection with the filing of this paper be charged to the Deposit Account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (case 503.35255VX6), and credit any excess payment of fees to such Deposit Account.

Respectfully submitted,

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